

Shane N. Grayson

EDUCATION

Bachelor of Science in Computer Science:

- New Mexico State University
- Las Cruces, NM
- Graduated May 2019
- Cumulative GPA: 3.25

Selected Course Work:

- Linux and Unix Administration
 - Worked and studied as a pseudo-Linux Administrator.
 - Added, removed, and maintained users and groups under the Linux Distro "OpenSUSE".
 - Used the Linux Command Line and Shell scripts, primarily Bash, to create automation for the Linux Operating System.
- Database Systems Management and Analysis
 - Administered the front-end and developed the back-end for the primary Database project.
 - Worked directly with the schema of the project which emphasized the use of MySQL for the back-end and PHP for the front-end.
 - Used Bootstrap to emphasize a better User Experience (UX).
 - Worked closely with ER-Diagrams, SQL Queries, and Normalization of a Database.
- Operating Systems
 - Designed and implemented System Calls for the Linux Operating System.
 - Designed and implemented programs for testing multi-threading and parallel-programming capabilities.
 - Researched and discussed important Computer Science Operating System concepts such as Deadlocking, Virtualization, and Synchronization.
- Computer Architecture
 - Learned about Pipe-lining, Parallelism, and Data Hazards associated with lower level languages.
 - Built and traced a simple Data-path that works with basic operations such as Read and Write to Memory, Read and Write to Registers, Branching, and Jumping.
 - Learned the fundamental theory behind caching and address mapping between the CPU and larger sources of memory.
 - Worked on Virtualization such as Virtual Addressing and Virtual Memory and, it's underlying theories.
- Data Structures and Algorithms

- Designed specific programs that utilized Data Structures such as Linked Lists, Stacks, Queues, and Trees
- Calculated and solved problems by hand for Recursion, Searching, Trees and Graph theories.
- Designed programs that utilized useful algorithms such as Merge Sort, Quick Sort, Red and Black Trees, and Dijkstra's Algorithm.
- Software Development
 - Designed, developed, and deployed a mobile application using important paradigms of the Software Development Life-cycle.
 - Used both a combination of the Agile and the Iterative Approach Methodology for tracking and assigning parts of the projects to be released.
 - Used UML class model diagramming structure to map out the logic and usage of the mobile application.
 - Used GitHub as our primary source of Version Control and Project Management
- Compilers
 - Learned the fundamentals behind Compiler Systems behind the popular languages like C/C++ and Java (to bytecode).
 - Designed a C-minus compiler using Yet Another Compiler Compiler (YACC), LEX, and C Programming Language.
 - Worked on important concepts such as Regular Expressions, Automata, Top-Down, Bottom-up, Predictive parsing, Symbol Tables, and Nondeterministic Finite Automata through Transition Diagrams.
- Machine Language Programming
 - Wrote and tested software and hardware using the Arduino development environment.
 - Designed and developed many programs that utilized the Arduino Uno such as a Body Mass Index tracker and a Solar Tracking Panel.
 - Learned about low-level and mid-level programming concepts such as specific registry manipulation and bit count such as twos-complement.
- C/C++ and Programming Language Structures
 - Learned about the basics of logic control and structures using loops and recursion.
 - Worked with MAKE files to configure and run C/C++ programs.
 - Designed simple Structures and Class objects to solve real world problems with C/C++.
 - Learned the basics of pointers, structures, and classes.

PROGRAMMING LANGUAGES:

Languages:

- Java(2 years), C/C++(2 years), Python, Ruby, Atmel AVR, MIPS, NASM, Shell, Perl, x86 Assembly(Arduino/C), PHP, HTML5, CSS5, JavaScript, BootStrap, Fortran, Ada, Lex, and YACC.

ENVIRONMENTS:

Technologies, Frameworks, and Environments:

- Linux(5 years)(OpenSUSE, Mint, Ubuntu), Windows(5 years)(XP, 7, and 10), VIM(2 years), Git/GitHub(2 years), GitLab, React, Android Studio, Microsoft Visual Studio, MySQL Workbench, PostgreSQL, NetBeans, NotePad++, Arduino, and Eclipse.

PERSONAL PROJECTS:

Personal Small Business:

- Started a small personal business with some friends from school that focuses on mobile, web, and personalized applications.
- Designed and deployed the businesses' main website.
- Worked in React using the free-to-use Material-UI component structure.
- Used GitLab for all our Version Control.
- Website can be found at: <http://dgbdatasolutions.com/>

Personal Website:

- Designed and built my own personal website using just HTML, CSS, and Bootstrap.
- Website can be found at: <https://shanegrayson.github.io/>.

WORK EXPERIENCE:

Physical Science Labs, Las Cruces, NM.

Student Intern (Summer 2016 – Winter 2016):

- Worked with the Metric Analysis team in finding inconsistencies and/or abnormalities in the data generated by simulations that were being ran daily.
- We accomplished this through analyzing and re-analyzing metrics drawn against the Database using PostgreSQL queries designed from mathematical functions.